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GENETIC POLYMORPHISMS OF ANGIOTENSIN II TYPE 1 RECEPTOR AND THE DEGREE OF LEFT ATRIAL REMODELING IN PATIENTS WITH NON-VALVULAR ATRIAL FIBRILLATION

ACC Poster Contributions
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Background: The renin-angiotensin system has been reported to play some roles in structural remodeling of atrial fibrillation (AF). We investigated angiotensin II type I receptor (AT1R) polymorphism and their relationship to the degree of left atrial (LA) remodeling in Korean patients with non-valvular AF.

Methods: We studied for genetic polymorphisms of AT1R in 348 patients with non-valvular AF (54.17±11.12 years old, male 80.34%, 231 paroxysmal AF [PAF], 117 persistent AF [PeAF]) and 400 age-sex matched healthy controls. We evaluated AF predisposing genes and those related with structural remodeling of LA.

Results: 1. AT1R rs5182 genotype was predisposed to AF (OR 1.345(1.003-1.802), p=0.0474). In haplotype analyses, AT1R rs5182-rs5186 (OR 0.723(0.540-0.969), p=0.0298) and rs422858-rs12695877 (OR 0.159(0.019-1.298), p=0.0497) were protective to AF. 2. AT1R rs422858 (OR 0.551(0.315-0.962), p=0.0349), rs275649 (OR 0.519(0.295-0.914), p=0.0231), and hapoltypes of rs422858-rs12695877 (OR 0.538(0.307-0.943), p=0.0291) and rs3772615-rs12721241 (OR 0.476(0.256-0.884), p=0.0172) were more prevalent in patients with PAF than those with PeAF. 3. AT1R rs422858 C allele was predominant genotype in patients with LA < 40mm or E/E'≥ 7.7 than those with LA ≥ 40mm (p=0.0261) or E/E'<7.7 (p=0.0404).

Conclusions: This study demonstrates the AT1R polymorphisms are associated with non-valvular AF and their structural remodeling of LA. AT1R rs5182 genotype was predisposed to non-valvular AF, and AT1R rs422858 may protective to the structural remodeling of LA and persistence of AF.